

ANTENNA COUPLING SYSTEMS AND METHODS FOR TRANSMITTERS  
ABSTRACT OF THE DISCLOSURE

Multiple radio channel frequency signals that are modulated with respective  
5 information modulation are transmitted from a common antenna at multiple radio  
frequencies. Multiple modulators are provided, a respective one of which  
corresponds to a respective one of the radio channel frequencies. Each modulator  
generates at least one constant amplitude, phase modulated drive signal at the  
corresponding radio channel frequency from the respective information modulation,  
10 such that the at least one constant amplitude, phase modulated drive signal  
corresponds to the information modulation for the corresponding radio frequency. At  
least one saturated power amplifier is provided for each of the at least one constant  
amplitude, phase modulated drive signals. A respective saturated power amplifier is  
responsive to the corresponding constant amplitude, phase modulated drive signal, to  
15 produce a corresponding amplified output signal at an output thereof. A coupling  
network connects the outputs of the saturated power amplifiers in series, to produce a  
combined signal that is applied to the common antenna, such that the common  
antenna radiates the radio channel frequency signals that are modulated with the  
respective information modulation. In first embodiments, the at least one constant  
20 amplitude, phase modulated drive signal is a single constant envelope modulation  
drive signal, wherein the information modulation is a constant envelope information  
modulation. In other embodiments, at least two constant amplitude phase modulated  
drive signals are provided at the corresponding radio channel frequency, such that the  
at least two constant amplitude, phase modulated drive signals correspond to the  
25 information modulation for the corresponding radio frequency.